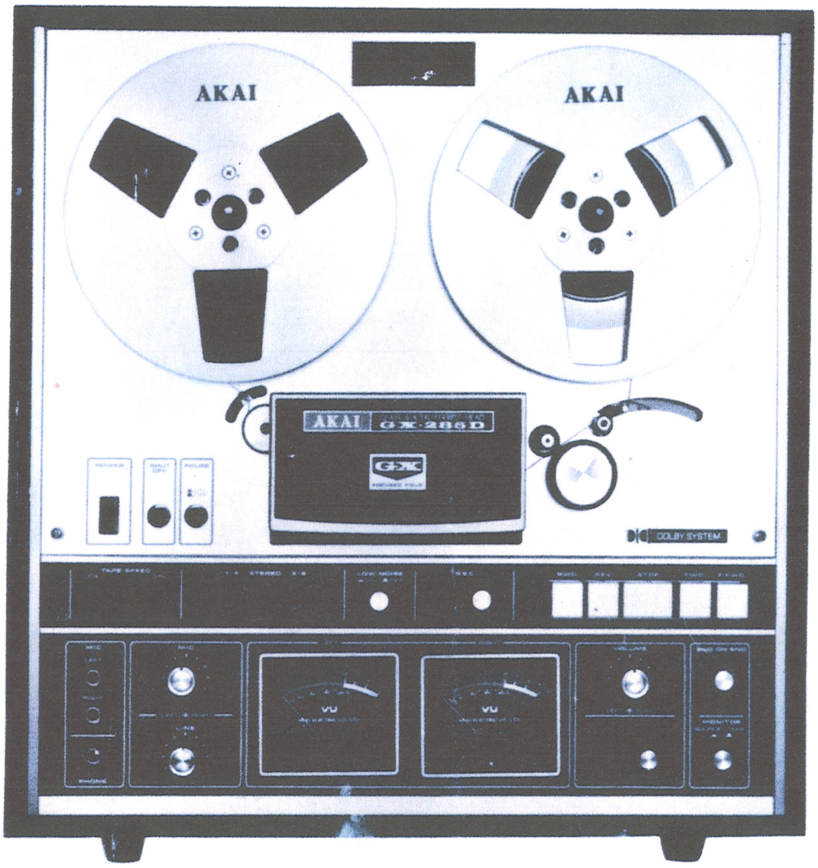
GX-285D

OPERATOR'S MANUAL

3-HEAD 3-MOTOR AUTOMATIC REVERSE
STEREO TAPE DECK


AKAI
AKAI
AKAI
GX-285D
GX
DOLBY SYSTEM
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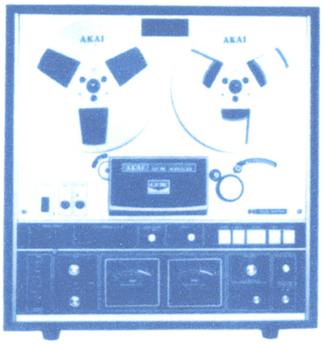


GX (glass & crystal ferrite) HEAD

Akai has equipped this model with its new and amazing GX Recording and Playback Heads to bring you unequalled open reel high fidelity sound. With the GX Head, high frequencies can be recorded in all their true fidelity covering 25,000 Hz with low noise tape. In other words, with this completely new Glass & Crystal Ferrite Head, high dynamic range and excellent signal to noise ratio are achieved. The secret of this success lies in the head materials, superior processing technique, and the focused-field recording system. The core of this quality head is made of single crystal ferrite and is mounted and set in glass. The superior high range characteristics are contributable to the structure of the head gap which focuses the magnetic field into a sharp oblong radius. This focused-field recording system minimizes high frequency loss, eliminates undue equalization and achieves a wider dynamic range.

DOLBY NOISE REDUCTION SYSTEM

Prior to the Dolby System, tape hiss, amplifier noise from resistors and transistors, induction noise from the head lead wires, etc., existed regardless of the kind of recorder. Naturally, the degree of such noise depended much upon the design and quality of the unit. Nevertheless, with even the highest quality units, the elimination of those noises, especially tape hiss, was thought to be impossible. With the Dolby System, however, tape hiss is reduced to a completely inaudible level. Basically, this system boosts the low level signals before recording and lowers them by precisely that same amount at playback time. That is to say, at low signal levels where noise is most apparent, boosting is maximum, and as signal levels rise, boosting is reduced. Then, at playback time, these boosted signals are lowered precisely and proportionately according to the previously boosted level. During this process the extraneous and superimposed noises are eliminated and hissing noise is amazingly reduced. This system coupled with the characteristics of the GX Head and the Tape Selector Switch enabling employment of low noise tape produces a heretofore unheard of musical clarity.

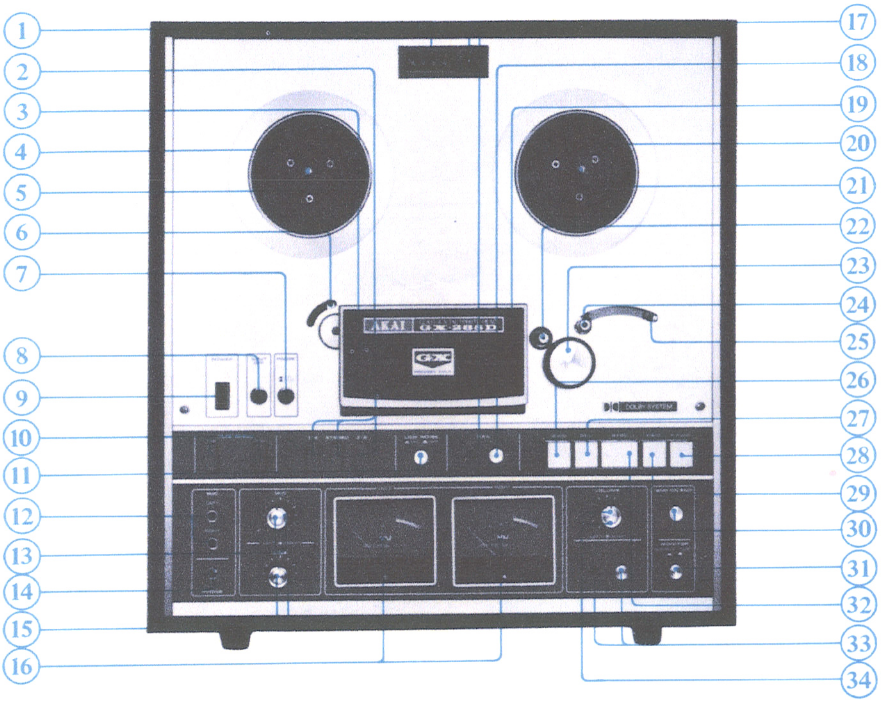
CEE, CSA and UL Standard models are not equipped with Voltage Selector and Cycle Conversion Switches. Therefore, voltage and cycle conversion is not necessary. If your machine corresponds to any of these standards, please disregard all references to voltage and cycle adjustment throughout this manual.

CEE Models : 220 V, 50 Hz
CSA Models : 120 V, 60 Hz
UL Models : 120 V, 60 Hz

INDEX

Controls 2
Voltage & Cycle Conversion 4
Tape Speed Selection 4
Fast Forward & Rewind 4
Automatic Stop & Shut-Off 4
Pause Control 4
Direct Function Change Control 5
Remote Control 5
Operating Precautions 5
Dolby Noise Reduction System 6
Tape Selector Switch 6
For Better Recording Results 6
Sound Monitoring 6
How To Use The Din Jack 6
Pinch Wheel & Capstan Cleaning 7
Head Demagnetizing 7
Tape Erasing 7
Tape Splicing & Editing 7
Tape Loading 8
4-Track Recording/Playback System 8
Playback Of Pre-Recorded Tape 9
Automatic & Manual Reverse Playback 10
Recording Using Microphones 11
Recording From An External Amplifier 12
Recording From A Turntable 12
Tape Dubbing 12
Sound-On-Sound Recording 12
Sound Mixing 13
Technical Data 13
Optional Accessories 14

CONTROLS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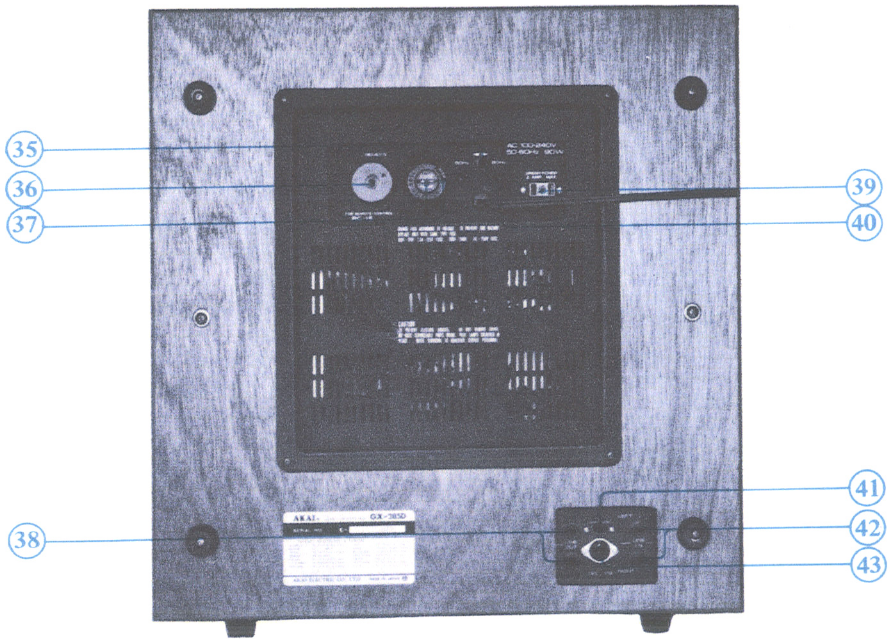
AKAI
GX-285D
DOLBY SYSTEM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AKAI
GX-285D
AC 100-240V
50-60Hz 90W

1. INDEX COUNTER & RESET BUTTON

For use in locating positions on a tape. With the Reset Button, set Index Counter to "0000" before beginning recording or playback.

2. TRACK SELECTOR BUTTONS

1-4/Stereo/3-2 Track Selector Buttons for easy track selection.

3. SENSING POLE

Reverses tape travel direction during playback mode. Automatic reverse is effected when the sensing foil (affixed to the inner side of the magnetic tape) comes in contact with this sensing pole.

4. SUPPLY REEL TABLE

5. REEL RETAINER

Pull tip of Retainer on reel shaft outward and turn to left or right to lock reel into place.

6. TENSION ARM

The Tension Arm not only works to correct tape slack, but also stabilizes tape speed. As the tape advances, proper tension is applied and tape vibration is eliminated.

7. PAUSE BUTTON

Convenient for use in temporarily suspending tape movement during recording or playback. Depress for pause mode.

8. AUTOMATIC SHUT-OFF BUTTON

The Automatic Shut-Off Button is linked to the Automatic Shut-Off Lever. If this button is at depressed position, when the tape comes to the end, the power of the entire unit will be cut off. A convenient safety feature in case the recorder is left unattended.

9. POWER SWITCH

10. TAPE SPEED SELECTOR BUTTONS

7-1/2 and 3-3/4 ips Speed Selector Buttons. Feather touch for easy selection of desired speed.

11. TAPE SELECTOR SWITCH

Set to ON position when using Akai Super Range Tape or other make low noise tapes. Set to OFF position for regular magnetic tape.

12. MICROPHONE JACKS (left & right)

When using microphones for recording, insert microphone plugs into these jacks.

13. MICROPHONE RECORDING LEVEL CONTROLS (left & right)

When using microphones for recording, adjust input with these controls while observing VU Meters.

14. HEADPHONE JACK

Connect stereo headphones of 8 Ω to this jack for monitoring sound during recording or for private headphone listening.

15. LINE RECORDING LEVEL CONTROLS (left & right)

For use in adjusting line recording level. Adjust while observing VU Meters.

16. VU METERS (left & right)

Indicates recording and playback levels. Normal recording level should not exceed "0" VU level.

17. RECORDING INDICATOR LAMP

Recording mode indicator lamp. When Record and Forward Buttons are depressed, this Recording Indicator lamp will light.

18. RECORDING SAFETY BUTTON

For effecting recording mode, while depressing this button depress Forward Button.

19. HEAD COVER

Houses Erase, Recording, Playback and Reverse Playback Heads.

20. TAKE-UP REEL TABLE

21. REEL RETAINER

Pull tip of Retainer on reel shaft outward and turn to left or right to lock reel into place.

22. CAPSTAN

Transports tape.

23. PINCH WHEEL

Presses against Capstan to transport tape.

24. SENSING POLE

Reverses tape travel direction during playback mode. Automatic reverse is effected when the sensing tape (previously affixed to outer edge of tape surface) comes in contact with this sensing pole.

25. AUTOMATIC SHUT-OFF LEVER

At the end of the tape, this lever is released and tape movement is stopped. If the Automatic Shut-Off Button is at depressed position, when the Automatic Shut-Off Lever is released, the power of the entire unit is cut off.

26. REWIND BUTTON

For effecting manual reverse playback. Sensing tape is used for automatic reverse.

27. REVERSE BUTTON

For effecting manual reverse playback. Sensing tape is used for automatic reverse.

28. FAST FORWARD BUTTON

For advancing tape in forward direction at high speed.

29. FORWARD BUTTON

Advances tape in forward direction for recording or playback. For recording mode, depress this button while depressing the Recording Safety Button.

30. SOUND-ON-SOUND BUTTON

See Sound-On-Sound recording procedure, page 12.

31. MONITOR SWITCH

During recording mode, set this Switch to SOURCE position for monitoring sound source, and to TAPE position for checking recorded signals. For playback, set Switch to TAPE position.

32. STOP BUTTON

Depress to stop tape travel.

33. DOLBY NOISE REDUCTION SWITCH & DOLBY INDICATOR LAMP

Set to ON position for recording or playback with the Dolby process. In other cases, the switch much be set to OFF position.

34. VOLUME CONTROLS (left & right)

For adjustment of sound level during playback mode.

35. CYCLE CONVERSION SWITCH

This Switch must be set to 50 Hz or 60 Hz in accordance with area power source.

36. REMOTE CONTROL JACK

For connecting RC-16 Remote Control unit (optional accessory). Enables control of recording, playback, stop, fast forward, rewind, and reverse playback modes from a distance.

37. UNIVERSAL VOLTAGE SELECTOR & FUSE POST

See Voltage & Cycle Conversion procedure.

38. LINE OUTPUT JACKS (left & right)

For playback, connect these jacks to the tape input jacks, or auxiliary jacks of an external stereo amplifier.

39. EXTRA AC OUTLET

Extra unswitched outlet. Not interlocked with front panel Power Switch.

40. AC CORD

41. DIN JACK HIGH/LOW INPUT SELECTOR SWITCH

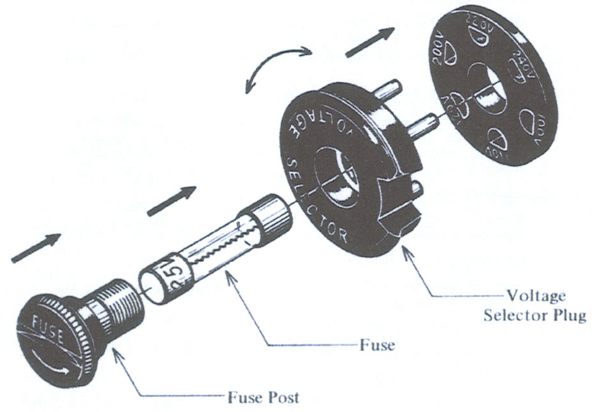
When using Din Jack for connection with an external amplifier, set this Switch to HIGH position when the output level of the amplifier is high, and to LOW position when the output level of the amplifier is low.

42. LINE INPUT JACKS (left & right)

To record from an external tuner amplifier or record player, connect the output jacks to these Jacks.

43. DIN JACK

This jack enables recording and playback through an external amplifier with the use of a single Din connection cord. When recording using Din Jack connection, recording level is adjusted with the Microphone Recording Level Controls.



VOLTAGE & CYCLE CONVERSION

VOLTAGE

Your machine is equipped with a universal voltage selector offering six selections of voltage from 100 V to 240 V AC for worldwide operation. Voltage is preset at the factory according to destination. Please confirm setting prior to operation and if readjustment is necessary, proceed as follows : (A) Disconnect power cord and remove the Fuse Post by screwing in direction of arrow. (B) Remove the Voltage Selector Plug and reinsert so that proper area voltage shows through the plug cut-out. (C) Change fuse to correspond with voltage and tighten Fuse Post. 100 V to 120 V : 1.5 A, 250 V fuse; 200 V to 240 V : 1 A, 125 V fuse.

* Be sure to disconnect power cord before attempting to readjust voltage.

* To maintain optimum performance and prolong the life of your machine, it is important that the line voltage be held within a 10% deviation of standard area voltage.

CYCLE

Correct tape speed cannot be obtained if the Cycle Conversion Switch located on the rear panel is not properly set. Set to 50 Hz or 60 Hz according to area power source.

TAPE SPEED SELECTION

The GX-285D operates on two tape speeds; i.e., 7-1/2 and 3-3/4 ips. For tape speed selection, simply depress Tape Speed Selector according to desired speed. The recording time using an 1800 ft. tape is as follows : STEREO : 3 hrs. at 3-3/4 ips and 1.5 hrs. at 7-1/2 ips; MONAURAL : 6 hrs. at 3-3/4 ips and 3 hrs. at 7-1/2 ips.

FAST FORWARD & REWIND

To effect fast forward or rewind, depress Fast Forward or Rewind Button of control panel. This feature permits rapid selection of recordings on the tape.

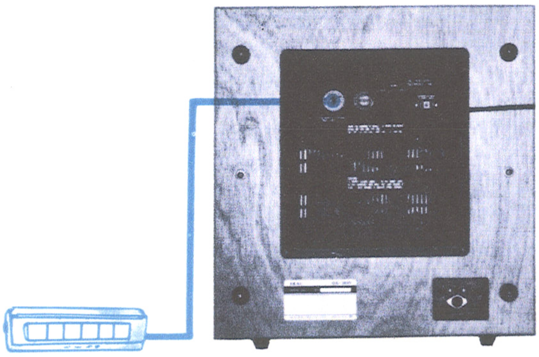
AUTOMATIC STOP & SHUT-OFF

One of the exclusive features of this model is the automatic stop and shut-off functions of the unit. For automatic stop (to stop reel movement at end of tape), leave the Automatic Shut-Off Button at OUT position. For automatic shut-off (to cut off the power of the entire unit at end of tape), depress the Automatic Shut-Off Button. If shut-off is desired after one complete reverse cycle, affix sensing foil on outside of tape at desired reversing point and depress the Shut-Off Button. If automatic continuous reverse is desired, apply sensing foil on the outside of the tape for normal playback to reverse, and on the inside of the tape for reverse to normal playback at desired reversing points and leave the Shut-Off Button at OUT position. If the Shut-Off Button is depressed, automatic shut-off will be effected at the end of one complete reverse cycle.

PAUSE CONTROL

For momentarily suspending tape travel during recording or playback. Pause Control is especially useful for editing tapes. Simply depress Pause Button when certain portions of the program are not desired. Depress again to release.

* Pause control does not function during fast forward or rewind mode.



DIRECT FUNCTION CHANGE CONTROL

Your unit features a completely automatic function change system for easy and speedy changing of operating modes. It is not necessary to depress the Stop Button before changing modes.

REMOTE CONTROL

All operating functions of the GX-285D can be remote controlled by using Akai Remote Control Unit RC-16 optional accessory. Plugs into Remote Control Socket at rear of recorder.

OPERATING PRECAUTIONS

The conditions listed below do not indicate mechanical failure of your unit. If your machine exhibits any of the following, please check for trouble as indicated.

Loss of sensitivity or tone quality

* When using tapes recorded with the Dolby process, it is imperative that the Dolby Noise Reduction Switch be set to ON position during playback.
* A.C. power voltage lower than the voltage to which your mahcine is adjusted.
* Magnetized heads. See Head Demagnetizing procedure.
* Wrong side of tape facing the heads.
* Defective or worn tape.

Machine will not operate

* Check positions of controls, input and output connections and plugs.
* Incorrect tape loading. Refer to Tape Loading.
* Machine is set to automatic stop or automatic shut-off, or to pause mode.

Irregularity of tape transport

* Oil adhering to Capstan. Refer to Pinch Wheel and Capstan Cleaning.
* Sticky or dirty tape surface.
* Bent reels.
* Incorrect tape loading.

Will not reverse play

* Sensing foil affixed improperly.

The following notes are provided for your convenience.

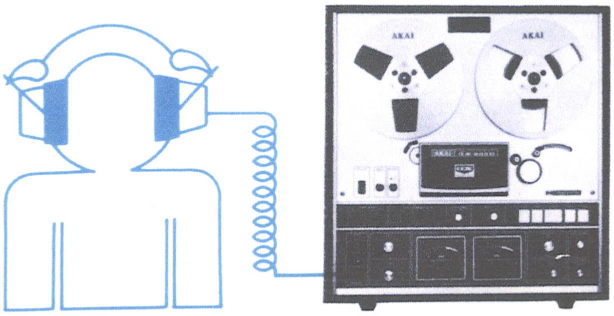
* Place your unit on a flat horizontal surface and operate in either horizontal or vertical position. Do not set anything on top of the unit which will obstruct the ventilator.
* The front panel of your machine may become rather warm during operation, but this is normal.
* Your machine requires constant voltage for optimum performance.
* If the sound sources are so far away from the microphones that the microphone recording level controls must be turned to maximum, some hum or noise will inevitably be recorded. A test recording is recommended before attempting a final recording.

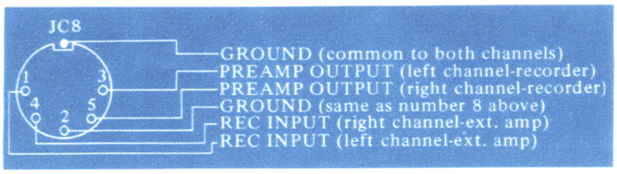
Should there be a problem with your machine, write down the model and serial numbers and all pertinent data regarding warranty coverage as well as a clear description of the existing trouble and contact your nearest authorized Akai Service Station or the Service Department of Akai Company, Tokyo, Japan.

DOLBY NOISE REDUCTION SYSTEM

The inclusion of the well-known Dolby Noise Reduction Circuit in this unit complements the characteristics of the GX Head for clearer sound reproduction. Depressing the Dolby Noise Reduction Switch to ON position activates the Dolby circuit to expand low level signals before they are recorded and lowers them by precisely the same amount during playback, thus reducing the extraneous and superimposed noise by as much as 10 dB for the reduction of tape hiss to an inaudible level.

* When using a tape on which the Dolby System has been utilized during recording, it is imperative that the switch be depressed to ON position during playback also.




JC8
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GROUND (common to both channels)
PREAMP OUTPUT (left channel-recorder)
PREAMP OUTPUT (right channel-recorder)
GROUND (same as number 8 above)
REC INPUT (right channel-ext. amp)
REC INPUT (left channel-ext. amp)

TAPE SELECTOR SWITCH

Depress this switch when using Akai Super Range Tape or other make low noise tape. This feature brings out the maximum response of low noise tape and works to change the recording equalization according to the tape. Although this machine exhibits a good frequency response with regular tape, this is further extended with low noise tape.

* Do not depress this switch when using regular tape.

FOR BETTER RECORDING RESULTS

With the recorder set to recording mode, the input level is registered on the VU Meters, but the recording level can be more precisely set by adjusting the volume controls while monitoring input signals through stereo headphones. Depress SOURCE Monitor Switch and adjust the input level so that the VU Meters register normally. For recording with the least possible distortion, keep the recording level as high as possible within the green part of the VU Meter scale.

SOUND MONITORING

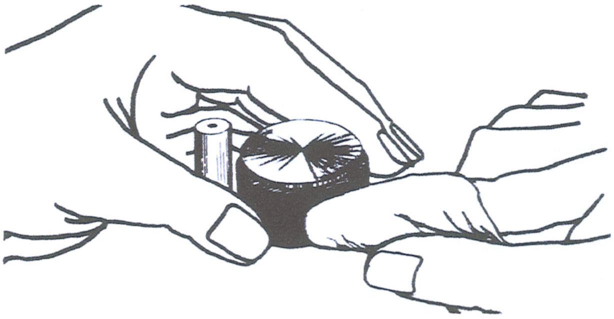
For monitoring sound source during recording, set Monitor Switch to SOURCE position. If the Monitor Switch is set to TAPE position, the recorded signals can be monitored as the tape passes the playback head. When headphones are used for private listening, this switch must be set to TAPE position.

HOW TO USE THE DIN JACK

The Din Jack at the rear of the recorder is for use in inter-connecting the unit with an external stereo amplifier. This one-cord connection system facilitates easy recording or playback through an external amplifier as the complex connection and disconnection of separate plugs and cords is not necessary.

When recording from an external amplifier, if the output level of the amplifier is more than 50 mV, set the Din Jack Input Selector Switch to HIGH position, and if less than 50 mV, set to LOW position.

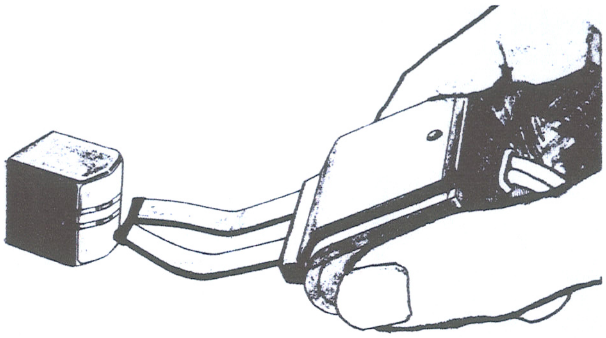
* When using the Din Jack connection, the input level is controlled with the Microphone Recording Level Controls.



PINCH WHEEL & CAPSTAN CLEANING

Magnetic particles from the tape or oil adhering to Pinch Wheel or Capstan will cause irregularity in tape transport as well as deterioration of sound quality. It is, therefore, recommended that these parts be wiped clean occasionally. For Pinch Wheel and Capstan cleaning, use Akai cleaning fluid (from Head Cleaning Kit HC-500) or alcohol.

- * While the GX Head usually requires no cleaning, when an old tape or spliced tapes are used, head cleaning is recommended. In such an instance, clean heads with a cotton swab stick soaked in Akai cleaning fluid or alcohol.
- * Do not use such chemicals as chlorothane, etc., as the rubber parts will deteriorate.



HEAD DEMAGNETIZING

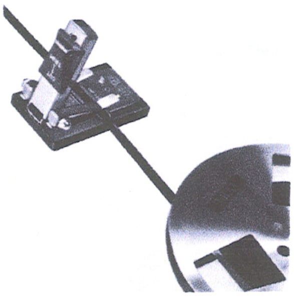
Normally, the steel pole pieces which form part of the heads become slightly magnetized. As magnetization results in noise or distortion and loss of high frequency response it is recommended that the heads be demagnetized periodically. This can be accomplished by bringing the prongs of a bulk demagnetizer close to the heads and making several small circular movements over all head surface areas as well as the head housing.

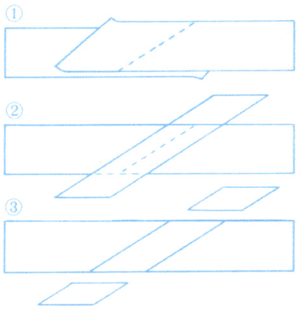
- * Be sure to turn off the power of your recorder prior to demagnetizing the heads.
- * Do not use magnetized tools in the vicinity of the heads.
- * Read demagnetizer instructions carefully before attempting to demagnetize heads.

TAPE ERASING

Any signals previously recorded on the tape will be automatically erased as a new recording is made. For erasing only, thread tape and set machine to recording mode. No plugs should be connected to the input jacks and the recording level controls should be kept at minimum. For quick and complete erasure, a bulk tape eraser is recommended.

- * Be sure to depress the proper track selector button for erasure. If STEREO Button is depressed, both the left and right channels will be erased.

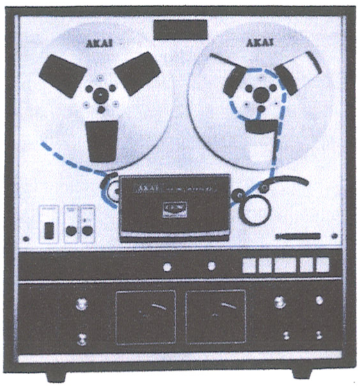




TAPE SPLICING & EDITING

Cut tape diagonally with an overlap so that the ends are lined up. Cutting tape on the diagonal eliminates detection of the splice in recording. Cover aligned ends with splicing tape, exerting pressure to secure ends evenly. Trim off excess splicing tape. Cutting into magnetic tape very slightly will eliminate the possibility of a sticky splice.

Splicing tape using scissors requires skillful work. For smooth and easy splicing, Akai Tape Splicer model AS-3 is recommended.



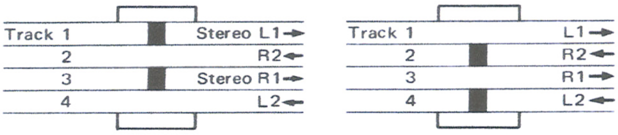
TAPE LOADING

Place a full reel of tape on the Supply Reel Table and an empty reel on the Take-Up Reel Table. Lock reels into place pulling tip of retainer on reel shaft outward and turning to left or right. Thread the tape as illustrated by the dotted line in the figure.

4-TRACK RECORDING/PLAYBACK SYSTEM

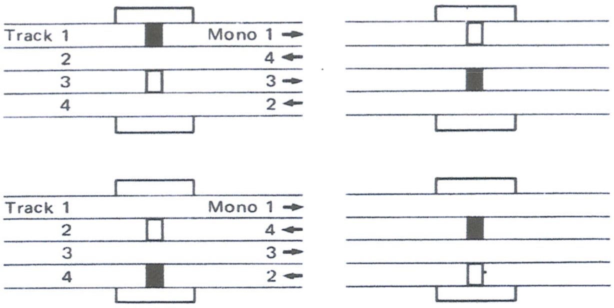
This model employs a 4-track system which can be used for either stereo or monaural. Select desired track(s) with Track Selector Buttons.

STEREO RECORDING & PLAYBACK



Stereo recording and playback requires the simultaneous use of two tracks. For stereo operation, depress the STEREO Track Selector Button. The first stereo recording (playback) takes place on tracks 1 and 3, and the second on tracks 2 and 4 after the reels have been inverted.

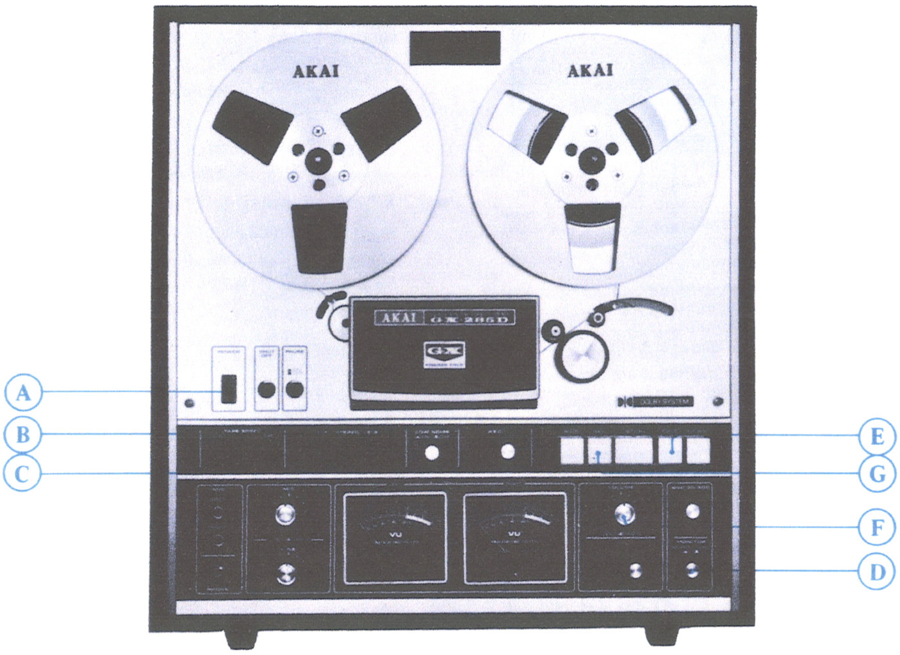
MONAURAL RECORDING & PLAYBACK



Monaural recording and playback sequence is 1-4-3-2. Depress 1-4 Track Selector Button. The first monaural recording (playback) takes place on track 1, and the second on track 4, after the reels have been inverted. Invert reels and depress 3-2 Track Selector Button. The third monaural recording takes place on track 3, and the fourth on track 2 after the reels have been inverted.

* This model does not record in reverse direction. For reverse playback, use sensing tape or Reverse Button provided on front panel, or invert reels.

PLAYBACK OF PRE-RECORDED TAPE



- * Please read operating precautions carefully before attempting operation.
- * Connect the Line Output of this model to the tape inputs of your stereo amplifier and connect a pair of speakers to the amplifier.
- * Connect power cord and load a pre-recorded tape.

STEREO PLAYBACK

A. Turn on Power Switch.
B. Depress STEREO Track Selector Button.
C. Depress Tape Speed Selector according to desired speed.
D. Set Monitor Switch to TAPE position.
E. Depress Forward Button to begin playback.
F. Adjust left and right Volume Controls of the GX-285D and volume controls, etc. of the external amplifier.
G. Depress Manual Reverse Button for reverse playback, or invert reels.

MONAURAL PLAYBACK

For monaural playback, substitute the following steps for steps B and F of stereo playback procedure.

Tracks 1 and 4

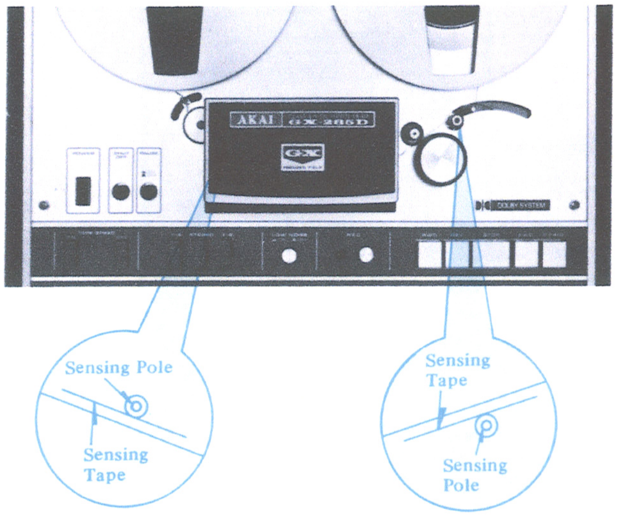
Only the left channel amplifier is used for playback on tracks 1 and 4.

B. Depress 1-4 Track Selector Button.
F. Adjust left Volume Control of the GX-285D and left volume control, etc. of the external amplifier.

Tracks 3 and 2

Only the right channel amplifier is used for playback on tracks 3 and 2.

B. Depress 3-2 Track Selector Button.
F. Adjust right Volume Control of the GX-285D and right volume control, etc. of the external amplifier.

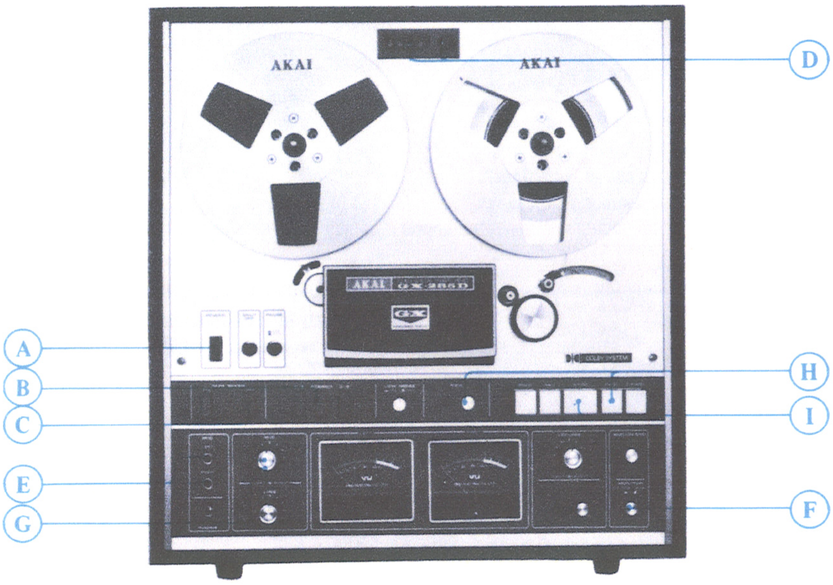


AUTOMATIC & MANUAL REVERSE PLAYBACK

For automatic reverse playback, affix about a 2.5 cm (1″) long piece of metallic sensing foil to the outside of the recorded tape at desired reversing point. If continuous reverse between two points is desired, affix another piece of sensing foil to the inside of the recorded tape at desired reversing point. As the sensing foil passes the Sensing Poles, reverse is effected. This Akai reversing system differs from ordinary reversing systems in that when reverse is being effected, the motor revolutions are reversed and the Pinch Wheel automatically separates from the Capstan, suspending reel movement momentarily until the exact tape speed to which the machine is set is reached. At this time, the Pinch Wheel again automatically contacts the Capstan and the tape begins to travel. Thus, tape speed is always accurately maintained and annoying noise as the tape reverses is completely eliminated. This model is also equipped with a manual reverse button for your convenience.

* See AUTOMATIC STOP & SHUT-OFF procedure.

RECORDING USING MICROPHONES



- * Please read operating precautions carefully before attempting operation.
- * Connect power cord and load a tape.

STEREO RECORDING

A. Turn on Power Switch.
B. Depress STEREO Track Selector Button.
C. Depress Tape Speed Selector according to desired speed.
D. With Reset Button, set Index Counter to "0000". This Index Counter provides an easy reference for locating positions on the tape.
E. Connect microphones to Microphone Jacks. Maintain at least 2 meters (7 ft.) between microphones.
F. Set Monitor Switch to SOURCE position.
G. Adjust and balance microphone input level with Microphone Recording Level Controls while observing VU Meters. Normal recording should not exceed zero VU on either meter.
H. When an optimum recording level has been determined, while holding Recording Safety Button at depressed position, depress Forward Button to begin recording. The Recording Indicator Lamp will light to indicate recording mode.
I. Depress Stop Button to stop recording.

MONAURAL RECORDING

For monaural recording, substitute the following steps for steps B, E, and G of stereo recording procedure and add step J.

Tracks 1-4

Only the left channel is used for monaural recording on tracks 1 and 4.

B. Depress 1-4 Track Selector Button.
E. Connect microphone to left Microphone Jack.
G. Adjust and balance microphone input level with left Microphone Recording Level Control while observing left VU Meter. Normal recording level should not exceed zero VU.
J. Invert reels to record on track 4.

Tracks 3-2

Only the right channel is used for monaural recording on tracks 3 and 2.

B. Depress 3-2 Track Selector Button.
E. Connect microphone to right Microphone Jack.
G. Adjust and balance microphone input level with right Microphone Recording Level Control while observing right VU Meter. Normal recording level should not exceed zero VU.
J. Invert reels to record on track 2.

RECORDING FROM AN EXTERNAL AMPLIFIER

If an external amplifier or tuner amplifier is used connect the tape outputs of the amplifier to the Line Inputs in step E of recording procedure.

* The recording level is controlled with the Line Recording Level Controls.
* If the Din Jack is used for this connection, VU level is controlled with Microphone Recording Level Controls.

RECORDING FROM A TURNTABLE

To record from a stereo or monaural disc, a crystal pick-up or a ceramic pick-up can be connected directly to the Line Inputs in step E of recording procedure. If a magnetic cartridge is used, it must connected to the Line Input Jacks through an external amplifier.

* The recording level is controlled with the Line Recording Level Controls.

TAPE DUBBING

When recording from another tape recorder, connect the line outputs or external speaker jacks of the playback machine to the Line Inputs instead of step E of recording procedure.

* The recording level is controlled with the Line Recording Level Controls.

SOUND-ON-SOUND RECORDING

For transfer of previously recorded material from one track to another, accumulating as many individual recordings on one track as is desired. Can be applied to language training, interesting musical compilations, etc.

First Recording

A. Confirm that there are no connections to the Line Input Jacks.
B. Depress 1-4 Track Selector Button for recording on track 1.
C. Connect microphone to left Microphone Jack.
D. Set Monitor Switch to SOURCE position.
E. Adjust left Microphone Recording Level Control while observing left VU Meter.
F. Depress Reset Button and set Index Counter to "0000".
G. While holding Recording Safety Button at depressed position, depress Forward Button to begin first recording; i.e., Do-Re-Mi.
H. When the first recording is completed, rewind tape to starting point.

Second Recording

I. Confirm that the Monitor Switch is at SOURCE position and depress Sound-On-Sound Button.
J. Depress 3-2 Track Selector Button for recording on track 3 while listening to track 1 through headphones.
K. Connect microphone to right Microphone Jack.
L. Increase right Line Recording Level Control to about mid-range.
M. Connect stereo headphones for monitoring the first recording on track 1.
N. While holding Recording Safety Button at depressed position, depress Forward Button to begin second recording; i.e., Do'-Re'-Mi'.
O. Adjust right Microphone Recording Level Control while observing right VU Meter.
P. Reset right Line Recording Level Control so that the sound being transferred from track 1 is the same level as the present recording.

* The second recording Do'-Re'-Mi' is made on track 3 as the first recording Do-Re-Mi is heard through headphones. The two recordings will completely merge on track 3; i.e., Do-Do -Re-Re'-Mi-Mi'.
* The third and subsequent recordings are made in the same way as the second by switching Track Selector Buttons to and from 1-4, 3-2. For playback, set Track Selector Button to track on which the last recording was made and set Monitor Switch to TAPE position.

SOUND MIXING

Another important feature of this model is the built-in microphone-line mixing circuit. Independent line and microphone recording level controls and input jacks enable signals from microphone and signals from other sources to be blended and recorded simultaneously on the tape.

For mixing line and microphone signals, follow Recording Using Microphones procedure substituting the following steps for steps E and G.

E. Connect microphones to Microphone Jacks and connect the line outputs of external source to the Line Input Jacks.

G. Adjust microphone volume level with Microphone Recording Level Controls and line input level with Line Recording Level Controls.

* Mixing can also be effected by using the Din Jack and Line Input connections simultaneously. In this case, Din Jack input is controlled with Microphone Recording Level Controls.

* For playback, operate Track Selector Button according to tracks used in making recordings.

TECHNICAL DATA

Track System	4-track 2-channel stereo/monaural system
Reel Capacity	Up to 7″ reel
Tape Speed	7-1/2 and 3-3/4 ips (±0.5%)
Wow & Flutter	Less than 0.08% RMS at 7-1/2 ips Less than 0.12% RMS at 3-3/4 ips
Equalization	Correct equalization for playback of tapes recorded to NAB curve.
Frequency Response	20 Hz to 25,000 Hz (±3 dB) at 7-1/2 ips (Akai SRT Tape), 30 Hz to 20,000 Hz (±3 dB) at 3-3/4 ips (Akai SRT Tape), 30 Hz to 23,000 Hz (±3 dB) at 7-1/2 ips (Regular Tape), 30 Hz to 19,000 Hz (±3 dB) at 3-3/4 ips (Regular Tape)
Distortion	0.8% (1,000 Hz "0" VU) with Akai SRT Tape
Signal to Noise Ratio	63 dB with Dolby process (Using Akai SRT Tape) 55 dB without Dolby process (Using Akai SRT Tape)
Erase Ratio	Better than 70 dB
Cross-Talk	Better than 70 dB (monaural) Better than 50 dB (stereo)
Bias Frequency	100 kHz
Heads	(3) : 4-track stereo/monaural Glass & Crystal ferrite recording and playback heads; 4-track erase head.
Motors	(3) : Outer-rotor 2-speed motor with servo-control circuit for direct capstan drive; two 6-pole eddy current outer-rotor motors for supply and take-up reel drive
Fast Forward & Rewind Time	60/75 sec. using a 1200 ft. tape at 60/50 Hz
Recording Capacity	2 hours stereo recording using a 1200 ft. tape at 3-3/4 ips.
Output Jacks	Line (2) : 0.775 V ("0" VU)/100 Ω Required load impedance : more than 20 kΩ Phone (1) : 30 to 40 /8 Ω
Input Jack	Microphone (2) : 0.8 mV/10 kΩ Line (2) : 150 mV/150 kΩ
Din Jack	0.4 V/50 mV (High)/2 mV (Low), 68 kΩ
Semi-Conductors	Transistors : 75 (FET 4) Diodes : 55
Power Requirements	100 V to 240 V A.C., 50/60 Hz
Power Consumption	90 W
Dimensions	435(W) x 460(H) x 260(D) mm (17.1 x 18.1 x 10.2″)
Weight	22 kg (48.4 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

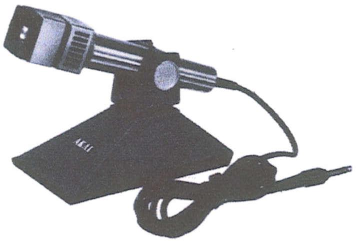
* Dolby is a trade mark of Dolby Laboratories, Inc.

STANDARD ACCESSORIES

Dust Cover	1
Empty Metallic Reel	1
Connection Cord	1
Sensing Tape	1
Spare Fuse	1 set
Operator's Manual	1

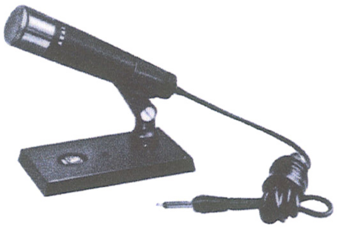
OPTIONAL ACCESSORIES

UM-101



Uni-Directional Dynamic Microphone

DM-13

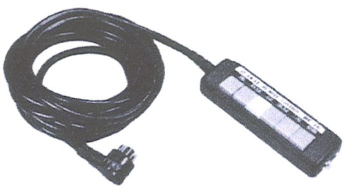


Non-Directional Dynamic Microphone

ATE-7

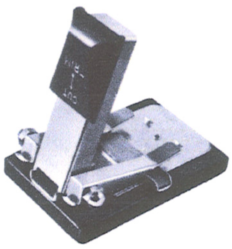
Tape Eraser

RC-16



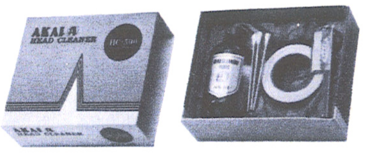
Remote Control

AS-3



Tape Splicer

HC-500



Head Cleaning Kit

ASE-22

Stereo Headphones

ASE-20

Stereo Headphones

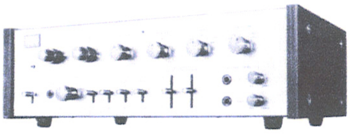
STEREO AMPLIFIERS

AA-8500

AKAI
AA-8500

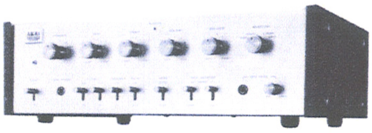
Stereo Tuner Amplifier

AA-5800



Stereo Pre-Main Amplifier

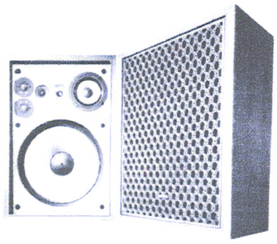
AA-5500



Stereo Pre-Main Amplifier

SPEAKER SYSTEMS

SW-175



5-Way 6-Speaker System

SW-161

4-Way 4-Speaker System

SW-155

4-Way 4-Speaker System